

5 **DIAMOND-LIKE CARBON HEAT SINK FOR REFLECTIVE OPTICAL
SWITCHES AND DEVICES**

Abstract of the Disclosure

10 A reflective optical switch device includes a diamond-like
carbon (DLC) heat sink layer disposed adjacent a reflective layer. In one
embodiment, the reflective optical switch is a MEMS mirror having a substrate
layer, a DLC heat sink layer, which is vapor deposited on the substrate layer,
and a reflective layer deposited over the heat sink layer. In another
15 embodiment, the optical switch device is a reflective LC-based switch having
a first substrate, a DLC heat sink layer deposited over the first substrate, and
an LC medium provided between a reflective electrode layer and a
transmissive electrode layer. The DLC heat sink enables rapid dissipation
and distribution of laser light induced heat away from the local target area of
the reflective surface, thereby reducing deformation of the reflective surface
20 and/or alteration of the optical properties within the local region to enhance
performance.

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